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UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE



ADDRESS REPLY TO
CHIEF, FOREST SERVICE
AND REFER TO

WASHINGTON

April 3, 1943

S
CONTROL, R-4
Insect
Annual Report, 1942

Regional Forester,
Ogden, Utah.



Dear Sir:

Reference is made to your insect control report for calendar year 1942.

It is to be regretted that the labor shortage appears to be such as to require the abandonment of the work on the Wasatch in view of the possibility of bringing the insect epidemic there under control. In this connection we are wondering if you have tried to employ the older high school boys on your projects. Some of the Regions gained a little relief from the labor shortage by a systematic employment campaign carried on in the local high schools.

It is encouraging to note the apparent reduction in the insect activity in the Region as a whole but especially on the Wasatch. Let us hope this trend continues.

Your summary of the test of Fall spraying and the use of different strengths of Ortho solutions was very interesting. Your conclusions appear to be fully warranted by the results. One copy of the report will be furnished to Dr. F. C. Craighead and your request (on page 4) for new or revised instructions called to his attention. In the meantime you should not hesitate to use the 6:1 solution as standard in your control work if you believe the quality of the workmanship will be good enough to give the desired results with this ratio. *6:1 is still a little better of 6:1*

Three copies of your report were received and as we have no use for more than two, one for our files and one for Dr. Craighead, the third copy is being returned as you may be able to make some use of it.

Very truly yours,

E. E. CARTER, Chief
Division of Timber Management

Enclosure.

S
CONTROL, R-4
Insect
Annual Report
1942

March 23, 1943.

Chief, Forest Service
Washington, D. C.

Dear Sir:

The highlight of the year from the viewpoint of insect control work in Region 4 was the loss of labor supply due to war demands. While in some cases this was compensated for by a decrease in the intensity of the insect epidemics so that on the whole the situation is not alarming it probably, on the other hand, will necessitate the abandonment of work on the Wasatch where had labor been available the epidemic could have been brought under full control in 1942, or in the spring of 1943.

With this exception it is probable work on other forests can be continued on a small scale and due to the fact that the jobs to be accomplished are small it is believed all epidemics except that on the Wasatch can be successfully reduced this year.

1. Mountain Pine Beetle (*D. monticolae* Hopk.)

a. Ashley - Wasatch

The Ashley-Wasatch control project has been a large one. As will be noted from the attached map a large area of infestation has been treated during the years 1940, 1941 and 1942. The data indicate that during that time a total of 47,950 trees have been treated and that some 12,139 remain to be treated. It is likely that had labor been available the work could have been completed during 1942.

It is barely possible that two small crews may be obtained this spring and units 21, 22 and a part of 11 cleaned up. Beyond this it is doubtful much can be done until after the war.

Generally the two cold wet seasons of 1941 and 1942 have resulted in a decrease in intensity of epidemic which may be illustrated by the estimates of new attacks on units 6, 7, 8, 11 and 12 for the years 1939 to 1942, inclusive, as follows:

1939	-	4,600
1940	-	12,824
1941	-	17,960
1942	-	9,357

Single and double new attacks are generally weak and one sided. Where there are groups, however, and this is the case on all units except those where maintenance only is listed, the attacks are strong. Mr. Groves reports "the attacks on Fish Creek were heavy and generally very blind. Attacks extended to about three-fourths of the length of the bole with brood development medium to heavy most of the distance. There were very few pitched-out or strip-killed trees. Groups of infested trees totaling 30 to 40 trees were common at the high elevation but four to six-tree groups were most prevalent on the area spotted." It is apparent from these remarks that while the trend is generally downward the indications are there is still a bad situation on the south end of the Wasatch. It is hoped the trend will continue downward.

The infestation on unit 11 is working north and west into the Granddaddy Lakes area, though not at as yet a very fast rate.

The epidemics on the Ashley on units 21 and 22 are hot ones but small and the Supervisor hopes to effectively reduce them this spring with a small crew.

Costs are high on this project due partly to inefficiency of laborers and high wages but also due to a great extent to the necessity for early spring or winter work because of inability to obtain crews during the summer. In view of the fact that it will be impossible to obtain sizeable crews at any time for some time to come it is planned to eliminate as far as possible the fighting of snow and mud, concentrate on small projects and do as much work as possible by the ortho-spray method. This is limited by the amount of ortho which it will be possible to secure but it now appears we will have ortho about as long as labor will be available.

With large projects and large crews a certain amount of snow plowing and transportation through deep mud is justifiable but for a small

crew of 10 to 15 men costs for this sort of thing soon become unreasonably high and it is planned to eliminate as much of it as possible.

Experiments.

1. Fall spraying.

This test was ^{repeated} reported in the late fall and early winter of 1941 on the Wasatch. ^{1/} Results were checked on in 1942 and reported on by Dr. Wygant. ^{1/}

Trees were treated successfully on November 1 and 3 and December 8 and 10. Snow depths ranged from six to 36 inches and temperatures from 5 to 45. Dr. Wygant concludes, "For the most part the fall treatment with penetrating oil was quite successful. The presence of snow on the ground interfered with the efficiency of the work in this preliminary test to such an extent that it is evident that control with penetrating oil will have to be limited to the early fall before heavy snowfall." It appears, therefore, that temperature was not a controlling factor and that the ortho-spray method can be successfully used early and late except when snow interferes.

2. Weak solution.

Up to 1942 the standard strength of ortho solution was 4:1. Mr. Evenden stated he had successfully used a 6:1 solution and therefore during 1942 on the Wasatch a 5:1 solution was standard. In the effort to ascertain how weak an ortho solution might be successfully tests were made of various strength solutions, namely 6:1, 8:1 and 10:1. Results of these tests were reported on by Dr. Wygant ^{2/} about as follows:

6:1 Successful
8:1 Partly successful
10:1 Never successful

With scoring of the bark on the butt of the tree and careful coverage it is probable use of the 6:1 solution would be successful. However, checking is difficult and for the average crew a solution weaker than 6:1 is not recommended.

^{1/} "Summary of a fall test with penetrating oil for control of the mountain pine beetle in lodgepole pine" - N. D. Wygant - September 6, 1942.

^{2/} "Tests with various amounts of orthodichlorobenzene in diesel oil for control of the mountain pine beetle" - N. D. Wygant - September 9, 1942.

It is our thought that the ortho-spray method is now beyond the experimental stage and it is recommended the Bureau of Entomology and Plant Quarantine write instructions for its use to be incorporated in our handbooks so it may be more widely used.

b. Minidoka Forest

The Minidoka Forest reports the infestations on that forest generally in a "weak endemic stage". They did, however, treat several groups totaling 105 trees by the use of contributed time and the ortho-spray method. The Supervisor concludes "each year some 100 trees bearing broods of mountain pine beetle are found on this forest."

c. Other Forests

The Payette reports "it appears that mountain pine beetle infestations have approached a normal stage".

The Sawtooth states "the infestation which was very strong in past years has been on the decline the past five years and now has reached a stage where very little activity is noticed, if at all".

Other forests make similar remarks.

2. Black Hills Beetle (*B. ponderosae* Hopk.)

a. Powell

As stated before, the situation on the Powell is such that some maintenance work at least will be necessary each year. As stated by Dr. Wygant "the Black Hills beetle probably will be difficult to keep under control on the East Fork of the Sevier until much of the now mature and overmature ponderosa pine is harvested." This and the fact that the Powell joins the Bryce Canyon National Park make it advisable to reduce infestations to a lower than usual standard.

Last summer's weather was favorable for build-up of infestations on the Powell. The 1941 fall survey indicated for all areas treated previous to that time, an average of but 7.7 infested trees per section well scattered. During the fall of 1941 treatment of all other infested areas with the exception of the Horse Creek unit was completed. This should have well cleaned up the Powell situation except for the Horse Creek unit. However, field examination in June of 1942 indicated grouping and strong attacks in various places on the East Fork of the Sevier River. A survey in the fall of 1942 therefore was conducted which indicated that with the exception of a unit next to the Park (Park unit, 2) and the Horse Creek unit (15), the infestations on the balance of the

Powell were endemic with a range of from 4 to 44 and an average of 15 per section well scattered. However, the Horse Creek unit had built up from 160 to 584 new attacks, and the Park unit to a total of 1,296 or an average of 70 per section.

It therefore was necessary to undertake treatment on these two units. The Powell has been able to obtain a small crew of 12 to 18 men and completed treatment of the Horse Creek unit (15) in the winter of 1942 with a total of 516 trees treated and report that on Park unit (2) estimated at 1,296 trees all trees have been spotted (1,185) and 1,000 treated as of March 13. The balance of the work to be done after completion of this unit will consist of clean-up on units 1, 8, 13, and 14 which will be done later when fading has taken place. It is stated "the small infestation on unit 13 can be treated through utilization by a local mill in the area."

It appears, therefore, that the Powell despite labor shortage will be placed in good condition by midsummer. It will be carefully scouted during the summer and every effort made to keep it that way.

b. Dixie

Some 1,597 trees have been treated on the Swains Creek unit in the past two years and it now is estimated there are about 100 trees left to treat. Funds have been allotted and the Supervisor expects to be able to secure the manpower to finish this job this spring.

The local force estimates there are some 375 trees on three widely separated areas which also should be treated and are hopeful these spots also can be cleaned up this spring.

c. Fishlake

The infestation on the Thousand Lake Mountain area remains unchanged. Mr. Furniss reported in September 1940 that the previous fall a scattered infestation of Black Hills beetle was present in the ponderosa pine stands of the Thousand Lake Mountain area and in 1940 "this year a definitely epidemic situation was found. Large groups of infested trees were prevalent throughout the stand."

In 1941 a formal survey and appraisal was made of this unit and the block, 2,085 M of ponderosa pine and 215 M of Douglas fir advertised for sale. No bids were received due to the cost of construction of some four miles of road. The Supervisor has this winter applied for a timber access road to serve this area and the six to ten million feet of spruce on the other side of Thousand Lake Mountain under attack

by mealy bug. There is some serious doubt this project will be approved as it has not yet been shown this project would definitely contribute to the war effort. It is likely, therefore, that the inaccessibility of this unit will make it impossible to salvage this timber. Control measures are not justified as costs would exceed the value of the threatened timber.

d. Ashley

The Ashley finds it necessary from time to time to do some clean-up work in reducing rather strong groups of ponderosa pine attacked by the Black Hills beetle on the Manila district on the north and east side of the Forest. Last year some 157 trees were treated largely on contributed time. The groups were strongly attacked and were in groups of from two to 62 trees. The Supervisor estimates there are about 100 trees which should be treated this coming spring. This also will be done largely on contributed time.

The last work done on this unit was in 1939 when with CCC labor 480 trees were treated on this district.

e. Other forests

No other forests report infestations due to the Black Hills beetle.

3. Western Pine Beetle (*D. brevicornis* Lec.)

Mr. Evenden reported in 1941 that the infestations on the Weiser, Idaho, and Payette Forests were endemic. These forests report the situation as unchanged in 1942.

The Salmon Forest reports to Mr. Evenden: "We believe that the ponderosa pine areas you formerly worked on (Colson Creek) are in much better condition and that the past infestations are declining."

4. Douglas Fir Beetle (*D. pseudotsugae* Hopk.)

a. Targhee

It was reported in the annual report for 1941 "all districts report the activity of the Douglas fir beetle appears to be subsiding."

The Targhee reports for 1942 "epidemic insect infestations on this forest are confined to the eastern portion of the Spencer ranger district and the South Shotgun area along the north side of Bishop Mountain. These infestations are in the Douglas fir and it appears that they are decreasing in intensity, the peak having been reached about 1939. Timber cutting is being carried on in these areas. Stoddard's sale embraces the

heaviest infestation on the Spencer district and the Montana and Idaho Company is cutting on a sale in the South Shotgun area. The latter is the operation that is being worked by Japanese-Eskimo labor."

b. Other forests

Other forests report as follows:

Teton - "Generally the Douglas fir beetle appears to be on the decline although some losses are still to be noted."

Sawtooth - "The Douglas fir beetle has been active over the entire forest the past few years. Small attacks were scattered throughout all Douglas fir stands of mature and overmature timber. This season it appears that this infestation has subsided to some extent and is on the decline. Control measures are impracticable and not thought necessary at this time."

Payette - "There seems to be a possibility that such infestations are approaching normal."

Powell - "The Bureau of Entomology and Plant Quarantine recommended that we get an estimate of the number of trees infested with Douglas fir beetle on the Park unit No. 2 and this was obtained along with the other survey data. There were surprisingly few new infestations, in fact, there was little evidence of trees having been attacked for the past three or four years. This point was carefully checked by the writer in company with Mr. Alvey after the survey had been made. A transect was run along the Bryce Canyon Park line in the area where the heaviest treating was done during the winter and spring of 1937 and not one new attack could be found. There were 879 Douglas fir treated that year and the estimate this year was 50 new attacks in the area recommended for treating this year (Park unit No. 2, 9,330 acres). On the west side of the East Fork there is a different picture. The Douglas fir beetle is spread throughout the stands and is very aggressive. New attacks will run into the thousands."

The Powell comments are interesting not only because they picture the situation as regards the nature of the epidemic but also because they show what can be done in the way of control.

5. Mealybug (Pato sp.)

Fishlake - The Fishlake reports the situation as regards the mealybug infestation of spruce in the Thousand Lake Mountain area as "not improved" although not many trees have as yet been killed as a result of the

attacks. It is estimated a total stand of about 10,000 M is badly infested and that as previously stated, the construction of roads so this timber may be marketed is under consideration.

6. Conclusions and Summary

It is hoped and expected that with the exception of the Wasatch the comparatively small control jobs in the Region will be cleaned up this spring. A few small crews can be obtained and some work will be done by use of contributed time. Not much hope is felt that the Wasatch will be able to do much although they may be able to round up a small crew. A definite resume' of the situation as regards labor and funds will be given you by April 15.

Copies of the Form I.C.-1 reports for the Region and individual forests are attached.

Very truly yours,

C. N. WOODS, Regional Forester,

W. B. Rice

By

Acting.

Enclosures.

INSECT CONTROL SUMMARY

1942

Region IV NATIONAL FOREST

C. I. 1942

Year	Name of Unit	Forest	Duration of Project (incl. dates)	Tree Species Affected	Insect Responsible	Method Followed	Acres Treated	Trees Treated	Per- cent Trees Felled	Expenditures				Total Cost of Project	Total Cost per Tree	Total Cost per Acre	Oil Used Gal. per Tree	No. Man Days Used	Percent Reduction Obtained
										P & M	Cont. Time & Expenses								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
1942	Ashley N. F.		4/1-6/16, 11/4-12/23	L.P.	D. monticolae	Fell. deck. burn	3,608	1,750	100			7,424.00	494.00	7,918.00	4.52	2.190	-	446	
			10/19 - 11/5	P.P.	D. ponderosae	" " " "													
	Dixie "		5/1 - 6/27	P.P.	D. ponderosae	Fell. pest. burn	6,480	458	100			2,822.11	42.00	2,864.11	6.25	.442	-	485	
			11/9 - 12/19		D. barberi														
	Minidoka N. F.		7/10 - 7/15	L.P.	D. monticolae	Ortho spray	1,200	103	50			-	65.50	65.50	.64	.055	1.00	200	
	Powell "		11/17 - 12/24	P.P.	D. ponderosae	Felling & burning	2,450	516	100			2,528.17	26.50	2,554.67	4.95	1.040	-	441	
	Wasatch "		5/11 - 7/29	L.P.	D. monticolae	Felling, deck. burn, Ortho	4,690	4,622	100			20,094.60	1,205.82	21,300.42	4.60	4.540	.94	3391	
			10/19 - 12/5																
					Total for R.	18,428	7,449	100			32,868.88	1,833.82	34,702.70	4.66	1.883	.60	5403	

REMARKS:

S
CONTROL
Insect
Ashley - Wasatch

LEGEND

Treated Prior to 1942

1. Broadhead-Eyestack	3,244
2. Iron Mine	14,007
3. Mirror Lake	1,720
4. Norway Flats	109
5. Upper Setting	85
8. Peterson Gulch	80
14. Smiths Fork	1,609
15. East Fork Black's Fork	12,303
16. West	2,394
19. Henry's Fk.-Red Mtn.	5,004
20. Sage Creek	130
Subtotal	41,735

Treated in 1942

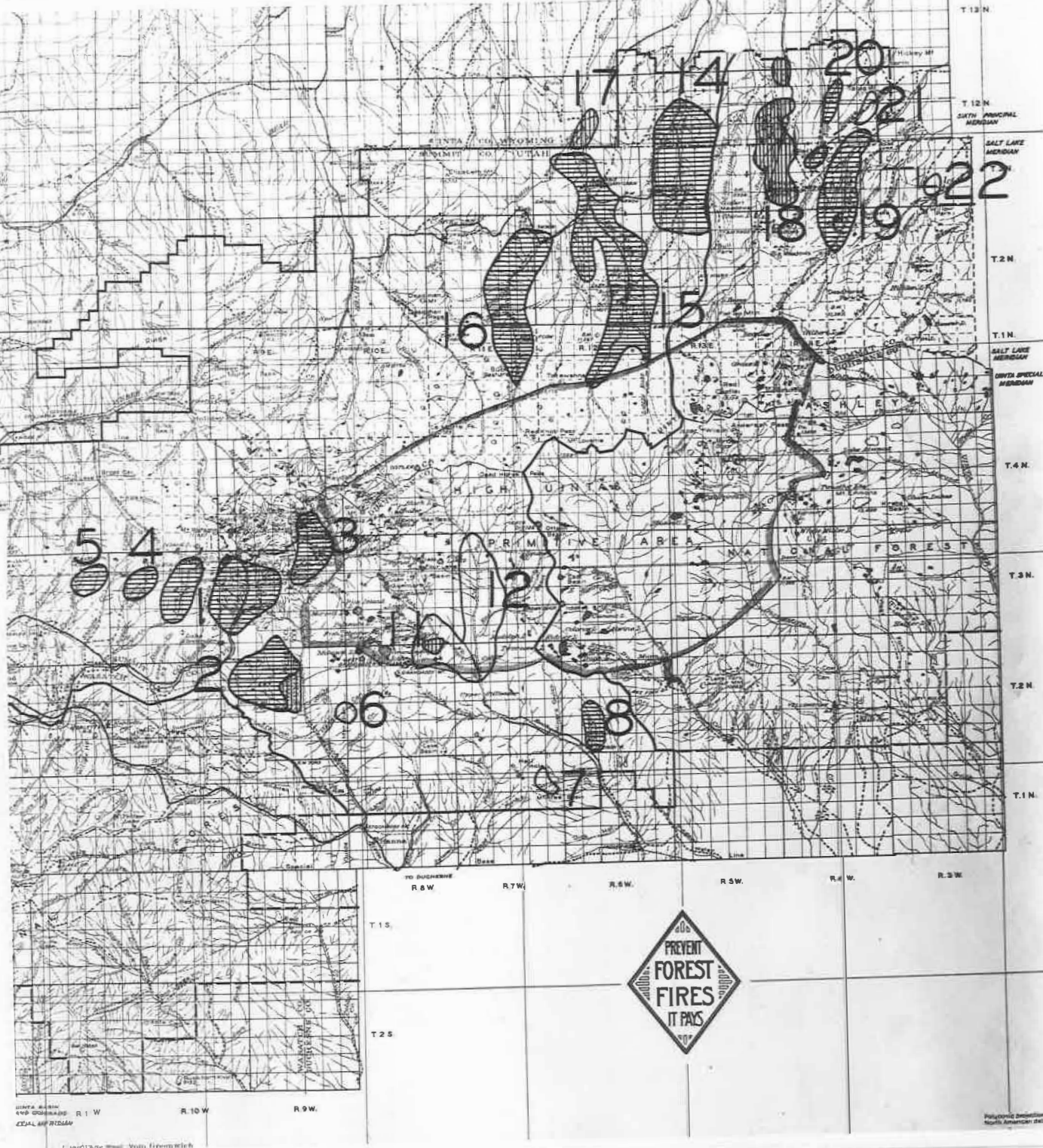
2. Iron Mine	4,040
11. Fish Creek	236
17. Wyoming	346
18. East Fk. Smith's Fork	1,593
Subtotal	6,215
Total	47,950

Untreated

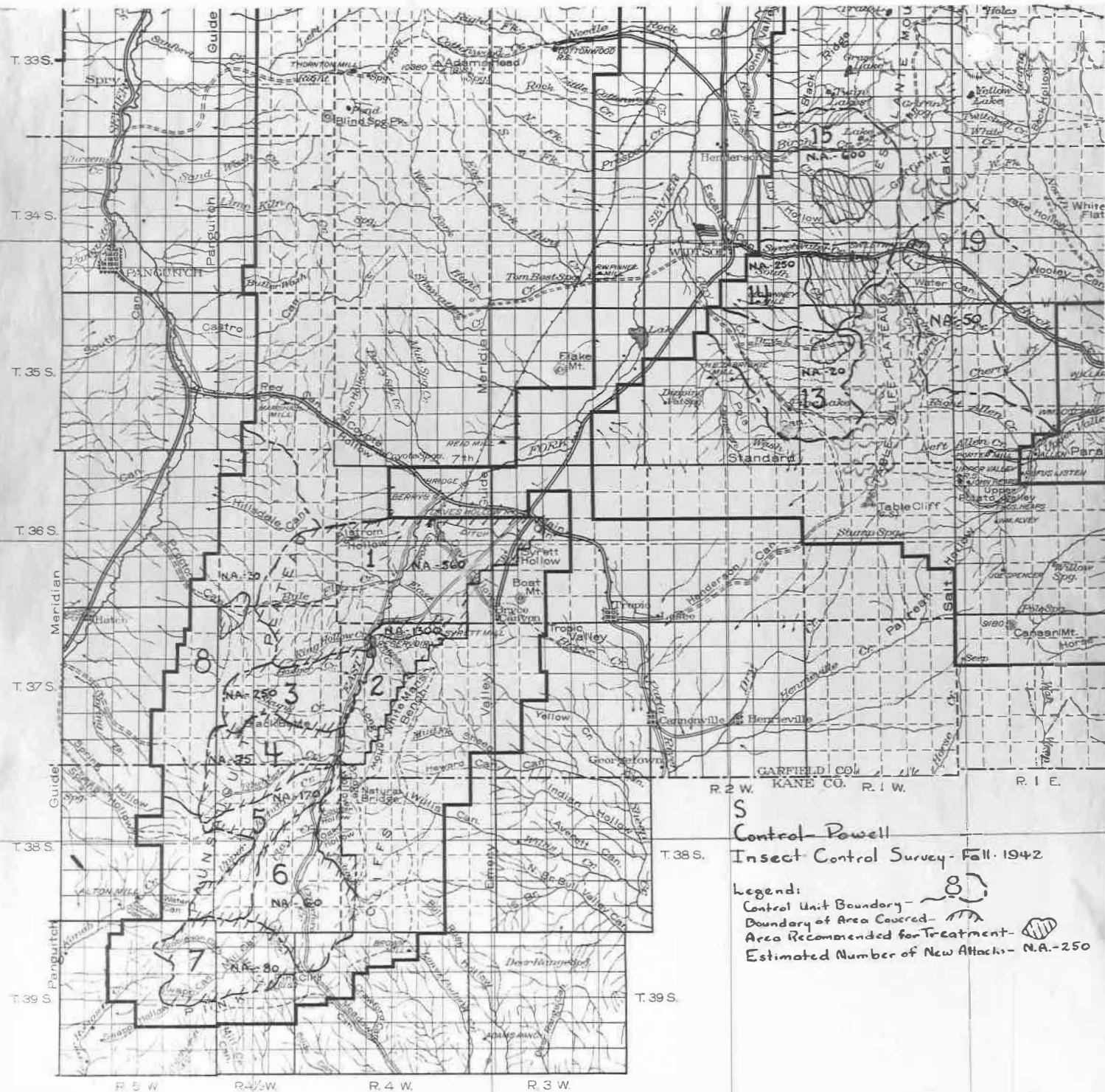
6. Hades Canyon	283
7. Corral Creek	116
11. Fish Creek	1,736
12. Rock Creek	6,925
21. Louise Creek	250
22. Deer Hill	200
Total	9,411

Needling Maintenance

1. Broadhead-Eyestack	1,430
2. Iron Mine	866
3. Mirror Lake	380
Total	2,728



1. Ashley-Wasatch from Greenwich



S
Control Powell

Insect Control Survey - Fall 1942

Legend:

- Control Unit Boundary - ⑧
- Boundary of Area Covered - [wavy line]
- Area Recommended for Treatment - [thick black line]
- Estimated Number of New Attacks - N.A.-250

INSECT CONTROL SUMMARY

ARIZONA NATIONAL FOREST

Year	Name of Unit	Forest	Duration of Project (Incl. dates)	Tree Species Affected	Insect Responsible	Method Followed	Acres Treated	Trees Treated	Per- cent Trees Felled	Expenditures					Total Cost per Tree	Total Cost per Acre	Oil Used Gal. per Tree	No. Man Days Used	Percent Reduction Obtained
										(11)	(12)	P & M (13)	Cont. Time & Expenses (14)	Total Cost of Project (15)					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)						(16)	(17)	(18)	(19)	(20)
1942	East Fork of Smith's Fork		4/1 - 6/16	L. P.	D. monticolae	Felled, decked and burned	2,962	1,228	100			4,365.00	260.00	4,625.00	3.77	1.56	-	580	
1942	East Fork of Smith's Fork, Dry Creek, Dahlgreen (upper)		11/4 - 12/23	"	"	" " " "	446	365	97			2,994.00	90.00	3,084.00	8.45	6.91	-	269	
1942	Summit Springs		10/19 - 11/5	P. P.	D. ponderosae	" " " "	200	157	100			65.00	144.00	209.00	1.33	1.04	-	37	
						Total	3,608	1,750	100			7,424.00	494.00	7,918.00	4.52	2.19	-	886	

REMARKS:

INSECT CONTROL SUMMARY

DIXIE

NATIONAL FOREST

Year	Name of Unit	Forest	Duration of Project (Incl. dates)	Tree Species Affected	Insect Responsible	Method Followed	Acres Treated	Trees Treated	Percent Trees Felled	Expenditures					Total Cost per Tree	Total Cost per Acre	Oil Used Gal. per Tree	No. Man Days Used	Percent Reduction Obtained
												P & M	Cont. Time & Expenses	Total Cost of Project					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
1942	Strawberry-Swains #2		6/2 - 6/27 11/9 - 12/19	P. P.	D. ponderosae D. barberi	Fell, peel and burn	6,480	458	100			2,822.11	42.00	2,864.11	6.25	.442	-	485	

INSECT CONTROL SUMMARY

MINIDOKA NATIONAL FOREST

Year	Name of Unit	Forest	Duration of Project (incl. dates)	Tree Species Affected	Insect Responsible	Method Followed	Acres Treated	Trees Treated	Per- cent Trees Killed	Expenditures					Total Cost per Tree	Total Cost per Acre	Oil Used Gal. per Tree	No. Man Days Used	Percent Reduction Obtained
												P & H	Cost. Time & Expenses	Total Cost of Project					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
1942	Cassia Division		7/10 - 7/15	L. P.	D. monticolae	Ortho		59	None				19.50	19.50	.33	-	Oil on hand and no record	-	-
"	Sublett Division		" "	"	" "	"		44	100				46.00	46.00	1.05	-	Maint.	-	-

REMARKS: 1942 - All infested trees found were treated.

INSECT CONTROL SUMMARY

POWELL NATIONAL FOREST

Year	Name of Unit	Forest	Duration of Project (Incl. dates)	Tree Species Affected	Insect Responsible	Method Followed	Acres Treated	Trees Treated	Percent Trees Felled (10)	Expenditures				Total Cost of Project	Total Cost per Tree	Total Cost per Acre	Oil Used Gall. per Tree	No. Man Days Used	Percent Reduction Obtained
										(11)	(12)	P & M (13)	Cont. Time & Expenses (14)						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
1942	Horse Creek Unit		11/17 - 12/24	P. P.	D. ponderosa	Felling & burning	2,450	516	100			2,528.17	26.50	2,554.67	4.95	1.04	-	441	

